Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A method for testing a semiconductor device, the method comprising:

measuring for a first semiconductor device a first current at a first voltage and a second current at a second voltage;

identifying a functional relationship between the first and second currents **wherein the first and second voltages are set within a range of about 50 to 140 % of a nominal supply voltage for the device**; and

comparing the functional relationship to a predetermined relationship to determine whether the device is defective, wherein the predetermined relationship is determined by at least one of evaluating the functional relationship for at least one other die on the same wafer or is determined from a plurality of dies fabricated previously.

Claim 2 (Original): The method as recited in claim 1 wherein the functional relationship is a ratio between the first and second currents.

Claim 3 (Original): The method as recited in claim 1 wherein the first semiconductor device is a transistor.

Claim 4 (Original): The method as recited in claim 1 wherein the first semiconductor device is an integrated circuit.

Claims 5-6 (Cancelled).

Claim 7 (Original): The method as recited in claim 1 further comprising measuring a third current at a third voltage and wherein identifying the functional relationship comprises identifying the functional relationships between the first, second, and third currents.

Claim 8 (Original): The method as recited in claim 1 wherein the first and second currents are quiescent currents.

Claim 9 (Original): The method as recited in claim 1 wherein the device is determined to be defective if it deviates from the predetermined relationship by a predetermined threshold.

Claim 10 (Original): The method as recited in claim 9 wherein the functional relationship is a ratio of the first and second currents and the predetermined threshold is about 20 % of the value determined for the ratio.

Claim 11 (Original): The method as recited in claim 1 wherein the first and second voltages are set within the range from 50 to 140 % of a nominal supply voltage for the device.

Claim 12 (Original): The method as recited in claim 1 wherein the first and second voltages are set within the range from 60 to 120 % of a nominal supply voltage for the device.

Claim 13 (Original): The method as recited in claim 1 wherein the first and second voltages are supplied by automated test equipment.

Claim 14 (Original): The method as recited in claim 1 wherein the first and second currents are measured by automated test equipment.

Claim 15 (Original): The method as recited in claim 1 wherein the predetermined relationship comprises a running average of the functional relationship for the devices previously tested.

Claim 16 (Previously Presented): A method for testing a semiconductor die, the method comprising:

measuring for the semiconductor die at least two quiescent currents, the first current of the two quiescent currents measured when a first supply voltage is applied to a supply terminal of the die and the second current measured when a second supply voltage is applied to the supply terminal of the die wherein the first and second voltages are set within the range from 50 to 140 % of a nominal supply voltage for the device;

determining a measured ratio between the first and second currents;

comparing the measured ratio with an expected ratio for quiescent currents; and

determining if the die is defective when the measured ratio differs from the expected ratio by a predetermined threshold.

Claim 17 (Original): The method as recited in claim 16 wherein the first and second voltages are supplied by automated test equipment

Claim 18 (Cancelled).

Claim 19 (Original): The method as recited in claim 16 further comprising measuring a third quiescent current at a third voltage and determining a measured ratio between the first and third currents, and the second and third currents;

comparing the measured ratios for the first and third currents and second and third currents with corresponding expected ratios for quiescent currents; and

determining if the die is defective when any of the measured ratios differs from the corresponding expected ratios by a predetermined threshold.

Claim 20 (Cancelled).

Claim 21 (Currently Amended): The method of Claim 1 [[20]] wherein the predetermined reference **further** comprises an expected functional relationship between said first and second currents as determined by at least one of: a measurement of a prototype chip or characterization of a history of similar chips already fabricated.

Claim 22 (Currently Amended): The method of Claim 1 [[20]] wherein the predetermined reference is **further** related to an ohmic linear relationship defined by the ratio of a first current at high V_{dd} and a second current at low V_{dd}.

Claim 23 (Currently Amended): The method of Claim 1 [[20]] wherein the functional relationship **further** comprises **an** [[a]] exponential relationship between the first and second currents.

Claim 24 (Cancelled).

Claim 25 (New): A method for testing a semiconductor device, the method comprising:

measuring for a first semiconductor device a first current at a first voltage and a second current at a second voltage;

identifying a functional relationship between the first and second currents wherein the functional relationship is a ratio of the first and second currents and the predetermined threshold is about 20 % of the value determined for the ratio; and

comparing the functional relationship to a predetermined relationship to determine whether the device is defective, wherein the predetermined relationship is determined by at least one of evaluating the functional relationship for at least one other die on the same wafer or is determined from a plurality of dies fabricated previously.

Claim 26 (New): A method for testing a semiconductor device, the method comprising:

measuring for a first semiconductor device a first current at a first voltage and a second current at a second voltage;

identifying a functional relationship between the first and second currents wherein the predetermined relationship comprises a running average of the functional relationship for the devices previously tested; and

comparing the functional relationship to a predetermined relationship to determine whether the device is defective, wherein the predetermined relationship is determined by at least one of evaluating the functional relationship for at least one other die on the same wafer or is determined from a plurality of dies fabricated previously.